COMBAT AND COPULATION IN *OXYURANUS MICROLEPIDOTUS* (ELAPIDAE). *Memoirs of the Queensland Museum 42(1): 104. 1997:-* Shine & Covacevich (1983) reviewed the ecology of *Oxyuranus* spp., largely from examination of museum specimens. However, while they were able to report body size and aspects of reproduction and feeding, combat between males and copulation were not described. Male vs male combat in Australian elapids is well known (Shine, 1991). It has been reported most recently (in *Demansia vestigiata*) by Covacevich et al., 1994. Such behaviour occurs in taxa characterised by male size superiority and is believed to be a strategy for forcing rival males away from a receptive female, defending against homosexual courtship and obtaining food ahead of a rival (Shine et al., 1981).

For *Oxyuranus* spp. accounts of combat/copulation are scant. Combat between ♂♂ *O. scutellatus* in the wild has been photographed (Shine, 1991) 'during the mating season'; and copulation has been observed in August and early December (Shine & Covacevich, 1983). Neither has been described previously in *O. microlepidotus*. In July-September, 1996 both combat and copulation were observed in wild specimens of *O. microlepidotus* in Astrebla National Park, 26km SE of No. 2 bore (at approximately 24°07'S 140°31'E), SWQ.

Combat ♂♂. Two specimens were encountered at approximately 17:22 hours, on 2 September, 1996 (Fig. 1; QM transparencies NR386, NR387, NR388). The snakes were fully entwined, 'plaited', as reported in black snakes by Shine (1978). Both specimens had their heads and approximately 40cm of their bodies raised from the ground and were frequently and alternately lashing out at each other. Their mouths were not and did not open. The snakes often came together with one head resting on the other. Their bodies were tightly coiled. What could be termed 'head-raising behaviour' frequently resulted in their falling suddenly to the ground, twisting and repeatedly rolling over one another. This behaviour continued for 30 minutes, when the snakes separated and moved slowly away. One went into a Bilby (*Macrotis lagotis*) burrow nearby. The other followed the first to the burrow entrance, apparently searching. This second specimen then entered the same burrow. After 20 minutes one specimen surfaced from a different entrance, approximately 2m from the first. The other re-emerged from the initial burrow entrance and a similar ritual of entanglement and head-raising ensued for five minutes. Both specimens then entered the first burrow. About one minute later, the head of one specimen appeared from the second entrance. The specimen emerged from the burrow and moved across the plain rapidly. This occurred at 18:10 hours as the last 20-30cm of the other snake was 'disappearing' down the first entrance. At that time there was little light and observations ceased.

Copulation ♂♀. On 6 August, 1996, two specimens were observed 2m from a Bilby burrow at 13:30 hours. One (presumed ♂),was 'draped' in a series of coils over the sides of the other (presumed ♀), which was motionless. They were 'joined' genitally (Fig. 2; QM transparency NR389). The (presumed) ♂ frequently was contracting its body, giving the impression that it was attempting to maintain its 'superior' position. Infrequently, every 5-10 minutes, the body of the (presumed)♂ contracted in a series of 'quivers', also along the length of the body. After 10-15 seconds these culminated in a short, sharp series of (presumed) orgasmic contractions. This behaviour continued for about 1 hr. Then the specimens moved slowly to and down the Bilby burrow. Two to three seconds later, one specimen emerged from the burrow and moved quickly to the mating site. It then returned to the burrow. This occurred twice during the next 10 minutes. On the last occasion, the specimen remained in the burrow. Both specimens were below ground when observations ceased at 1500 hours.

FIG. 1. Male *Oxyuranus microlepidotus* combat. (P. McRae)

FIG. 2. *O. microlepidotus* in copulation. (P. McRae)

These observations both concur with and vary slightly from previous reports of other elapid species. They conform with an observation (Shine, 1978) that elapids which are heavy and muscular hold their bodies upright during ♂♂ combat. That ♂♂ combat occurs in *O. microlepidotus* may be at variance with the observation that such behaviour is known only where ♂♂ are larger than ♀♀ (Shine, 1991). The difference between the body sizes of ♂♂ vs ♀♀ *O. microlepidotus* has not been shown to be statistically significant (Shine & Covacevich, 1983). However, the sample (♂♂13, ♀♀6) was small. Copulation by *O. microlepidotus* in the wild in August is consistent with the timing of this behaviour in captive specimens.

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